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ABSTRACT

The purpose of the present study was to determine if a procedure could be devised to eliminate the need for a therapist in reinforcing for expressions of affect, feedback, or empathy. Twenty-six male and 22 female undergraduate volunteers were randomly assigned to 12 "human relations" groups, comprising three replications of four conditions: 1. instructions only (I); 2. instructions plus feedback (IF); 3. instructions plus therapist (IT); 4. instructions plus feedback and therapist (IFT). Ss in all four conditions received instructions suggesting that open, frank discussions were facilitated by focusing on each individual's 'here-and-now' feelings, whether positive or negative, by providing feedback about how actions of the others affected S's feelings, and by empathizing or trying to understand the other's feelings. Three therapists were assigned to one replication of each of the two therapist conditions, Ss in the feedback conditions were told that the digital counters with attached red lights which were placed in front of them would provide them with information about how well they were following instructions. Analysis of variance yielded significant effects for feedback and therapist, suggesting that operant techniques may be as effective as the presence of a therapist in a group, and also serve as an important adjunct. (Author)

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Since Eysenck's (1952) report on the efficacy of more traditional approaches in psychotherapy, a variety of alternative methods have been investigated. Foremost among these are the behavior modification techniques suggested by learning and reinforcement theory and encounter or therapeutic group techniques. Although both approaches have stimulated a large body of research with generally favorable results, the types of data generated are qualitatively different (Bednar and Lawlis, 1971; Krasner, 1971). Research in behavior modification is generally more sophisticated and concerned with procedure and technique, while group therapy studies tend to be poorly controlled and concerned with global outcome measures.

Quite probably much of this difference is due to the fact that generally the goals of behavior modification are limited to changing the frequency of a clearly specified and observable behavior, while group therapy goals tend to be global and concerned with intrapsychic processes. If it were possible to state at least certain sub-goals of therapy groups in observable terms, then both more sophisticated experimental designs and the application of learning principles to groups might be possible. One possible approach is suggested by Krasner (1962) and Salzinger and Pisoni (1960) who propose that therapeutic catharsis may result from the selective reinforcement of patients' affectively toned verbalizations. Several investigators (e.g., Ince, 1968; Ullmann, Krasner, and Gelfand, 1963) have shown that affect words can be conditioned in an individual

setting. Williams and Blanton (1968) found essentially identical, negatively accelerated, response curves for affect words over a series of 10 sessions, both when subjects underwent reinforcement procedures and also when subjected to more traditional psychotherapy. Ullman, Krasner, and Collins (1961) found that reinforcing affect words while telling TAT stories led to increased affective verbalization, in a later group therapy session.

Liberman (1970, 1971a, 1971b) is one of the few investigators to make a direct application of operant principles to group therapy. Two second year residents, matched for experience and personality variables, were assigned therapy groups for 37 weekly sessions. In the control group, the therapist used a traditional group-centered approach, while the experimental group therapist used his interventions to reinforce expressions of support, concern and affection. Patients in the experimental group showed more signs of cohesiveness, independence from therapist, quicker symptom remission and greater personality change than did patients in the control group. Similarly, there are numerous examples of group modification of other verbal response classes: e.g., verbal initiations (Hastorf, 1965; Hauserman, Zweback, and Plotkin, 1972); giving opinions (Oakes, 1962), order of speaking (Levin and Shepiro, 1962), conclusions reached (Oakes, Droge, and August, 1961), and personal or group references (Dinoff, Harner, Kurpiewski, Rickard, and Timmons, 1960). Kruger (1971) found that peer reinforcement was superior to reinforcers given by the group leader in eliciting desirable interactions, but categories for the two conditions differed and no checks were made on interjudge agreement for categories.

As indicated above, it appears desirable to reduce the goals of group therapy to a series of observable sub-goals. Since the problems exhibited by a group of clients are seldom identical, it seems necessary to specify

behavioral goals of some universality either in terms of commonly shared problems or in terms of generally adaptive interpersonal behaviors. In the selection of group goals, the authors have relied heavily upon Yalom (1970). Yalom suggests that a group provides a social microcosm which allows for a corrective emotional experience for trying out new behaviors. To support this experience it is essential that group members express their feelings toward the others in the group as these feelings arise ('here and now'). Further, it is necessary that group members provide feedback and consensual validation for each other so that they can test the appropriateness of their behavior. Finally it seems necessary that group members attempt to understand each other's actions and feelings (empathy). Without the latter, group interaction could quickly turn into a game of emotional 'one-upsmanship' and thus not provide the necessary, 'safe' cues for open expression. It seems quite plausible to expect that verbal expressions of 'here-and-now' affect, feedback, and attempts to empathize can be reliably discriminated by observers. If so, then response classes should be amenable to reinforcement procedures.

This conceptualization raises one final point of interest. If the goals of group therapy can be attained using operant procedures, then the role of the therapist need not be more than that of an observer and reinforcement dispenser. Wolf (1961) has suggested that the presence of a therapist may lead to an antitherapeutic dependence on the therapist. In fact, Salzberg (1961) has found that verbal interaction by group members is inversely related to the frequency of the therapist's verbalizations. Harrow, Astrachan, Becker, Miller, and Schwartz (1967) found that differences in emotional climate between led and unled groups were slight, with therapist led sessions showing more depression and tension and

slightly less warmth. Others (e.g., Slavson, 1964) object, feeling that disruptive acting out may occur in leaderless groups. The proposed paradigm appears to offer both a means of testing this issue as well as a possible method of retaining indirect control while avoiding negative therapist effects.

The purpose of the present study was to determine the effects of reinforcement and discriminative cues upon the verbalization of affect, feedback and empathy statements in a group setting. In addition it was desired to determine the effects of a therapist's presence upon the group and to compare the efficacy of the operant procedures with a more traditional therapist led group. It was thought that the response classes involved might result in social reinforcement from other group members, and thus be resistant to extinction. Therefore, a factorial design was employed in the experiment rather than an acquisition/extinction/reacquisition design.

METHOD

Subjects

26 male and 22 female Caucasion, undergraduate volunteers at Oklahoma State University received extra course for participation in a 'human relations' experiment. Ss ranged in age from 17 to 45, with a mean age of 21.4. Ss were randomly assigned in groups of four to one of three replications of each of the four experimental conditions: instructions only (I); feedback plus instructions (FI); therapist plus instructions (TI); and feedback plus therapist plus instructions (FTI).

Ss in each group were strangers to each other and were given minimal opportunity to interact before the experiment started. Once all four Ss had arrived they were introduced, ushered into the experimental room, and seated in a semi-circular arrangement around a small table, facing the

one-way mirror of the observation room.

Apparatus

Each group's conversation was tape recorded and simultaneously monitored by the E via the one-way mirror and headphones. A four channel relay control panel, with push buttons operating digital counters and a multiple event recorder, was used to record those instances where E judged that a group member's statement fit one of the reinforceable response categories. In the FI and FTI conditions a digital counter placed in front of each S was simultaneously advanced, producing an audible click. In addition to providing feedback to S concerning his performance, it was expected that the clicks would provide information to the other Ss for modeling or vicarious learning. A red light attached to each S's counter was also used to provide two additional types of discriminative cues: 1. all four lights were automatically flashed on by an interval timer whenever three minutes elapsed with no reinforcements being given to the group; 2. each light was individually switched on whenever any S fell 10 or more counts behind the S with the highest count. Ss were instructed that when all four lights flashed on, this was a signal that their conversation was not conducive to effective human relations and that they should change the topic. They were also informed that when one light was switched on, that person was having difficulty in expressing himself and required help from the others. It was thought that this latter procedure, together with the counters, would enhance S's motivation by encouraging a moderate degree of competitiveness. Finally a 60 minute interval timer, started at the beginning of the experiment, was used to signal the end of each group session.

Response categories

Response categories were chosen to include the expression of feelings,

giving and asking for feedback on current behavior, and the use of empathic statements. On the basis of pilot work general areas were broken into five categories, operationally defined as follows:

1. Feeling - Any group member's verbal labeling of his own internal, subjective, affective state produced by interacting with other group members or the present physical situation. Affective states are defined as those internal subjective states excluding cognition, conation, and perception. This definition excludes such statements that contain verbalizations such as "I think," "I feel obliged," and "I hope".

2. Seeking information from another group member regarding his feelings, as defined above in number 1.

3. Seeking information regarding one's own behavior in the current situation.

4. Statements made to another group member describing or labeling one's own perception of that group member's current behavior.

5. Empathy - any attempt to clarify, by means of verbal labeling, the expressed feeling states (as defined in number 1) of another individual in regard to what transpires in the current situation.

In the contextual sequence of interactions, only those statements that added new or additional information about the ongoing processes and accompanying subjective states were defined as reinforceable. In addition, the current situation was defined as that time period beginning when the experimenter leaves the experimental room after having given the instructions to the group and ends after the group has interacted for a period of sixty minutes.

Verbatim transcripts of two FI sessions, conducted during pilot work, were used to estimate inter-judge agreement on the response categories.

Scorable units were defined as any non-interrupted, complete thought or statement. The few instances of disagreement between judges as to what constituted a scorable unit were resolved in conference. The judges, both second year graduate students, then independently scored 670 units. There were disagreements on 46 units, which resulted in an interjudge agreement level of 93%, suggesting that these categories can be reliably judged.

Procedure

After being seated, Ss in all experimental conditions were given instructions suggesting the social desirability of sharing one's feelings, being empathetic and providing feedback. Definitions of each of the categories were provided, together with a summary card which was placed in front of S. Ss were told that if they could express themselves in this fashion, the group experience would be more rewarding.

Ss in the FI and FTI conditions were also given detailed instructions concerning the feedback apparatus and were told that E would help them try to achieve the experiment's goals by providing feedback on how well they were doing. Two male and one female, third year graduate students, each of whom had participated in a year-long training group led by the senior author, served as therapists (facilitators) in the TI and FTI conditions. Each therapist was randomly assigned to one group in each condition, was instructed to help Ss achieve the experiment's stated goals in anyway they thought useful, and received no further instructions beyond those given the Ss. In general, the approach taken by each of the therapists conformed to the principles of group therapy espoused by Yalom (1970).

At the end of a group session, each S was asked to fill out an 11 item, Likert type scale, detailing his reactions to the experiment and how well he thought he and the other Ss were able to follow instructions and express

feelings. Finally, Ss were debriefed and allowed to continue interacting if they so wished. With few exceptions, Ss continued interaction for 10-30 minutes.

Results and Discussion

The frequencies of reinforceable statements for subjects in each of the experimental conditions were analyzed by a two factor analysis of variance (feedback x therapist). As Table 1 indicates, there were highly significant F's for both the feedback and therapist factors.

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Insert Table 1 about here

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The mean number of reinforceable statements per subject for the four conditions were as follows: I = 0.83; FI = 9.75; TI = 12.75; FTI = 23.25. These results indicate that while detailed instructions are largely ineffective, the operant techniques used in this study produced a level of interaction very similar to the interaction induced by the presence of the therapists. Further, the combination of a therapist with the operant techniques appears to have resulted in a summation effect. It should be noted, however, that much of this apparent summation effect was due to one of the FTI groups in which Ss responded with a mean frequency of 39.50 reinforceable statements per S during the session; i.e., this group emitted a "here-and-now" emotion, feedback, or empathy statement at a near asymptotic rate of 2.63 statements per minute. Mean scores across replications of the other experimental conditions showed very little variability.

Therapists responses in the TI and FTI conditions were scored for congruence with the different reinforcement categories to investigate possible reasons for the variability in the FTI condition. Several features seemed to distinguish the behavior of the therapist in the high frequency FTI group. First, this therapist spoke 49 times during

the hour as compared with 82 and 91 statements by the other two therapists in the FTI conditions. Secondly, 40% of his statements fell in one of the reinforcement categories, as compared with 31% and 32% for the other therapists. Finally 28% of his statements involved information seeking regarding group member's feelings (category 2) as compared with values of 15% and 18% for the other therapists. The picture which emerges is that of a task oriented therapist, keeping his interventions to a minimum and allowing the group considerable autonomy.

Interestingly, this same therapist showed relatively more task orientation in the TI condition, but also became very much more active than the other therapists. The fact that the three groups in this condition performed almost identically suggests that whatever gains may have accrued from task orientation were masked by allowing the group less autonomy. A final point of interest which emerged from the analysis of the therapist's responses was the finding that the percentage of reinforceable therapist statements increased from an average of 20% in the TI condition to 34% for the FTI condition. This indicates that the reinforcement of subject responses resulted in greater task orientation on the part of the therapists. It may have been that the subject reinforcements served as a motivational device for the therapists but it seems more likely that this increment reflected modeling as vicarious learning effects.

As a check on the reliability of judgments on the reinforcement categories under actual experimental conditions, the tape recording of the high frequency FTI was scored independently by two judges. Disagreements were referred to a third judge and the resultant protocol was compared with the reinforcements actually administered by E. Of a

total of 681 statements (defined as before), 167 were determined reinforceable by the panel of judges. 158 reinforcements were actually administered, of which 8 were later adjudged erroneous. E missed giving reinforcements in 17 cases for a total of 25 errors or a 96% level of interjudge agreement. It should be noted that missed reinforcements have the effect of introducing an intermittent schedule and are thus not particularly serious. The fact that E was able to maintain a higher level of accuracy than had been attained earlier (and did so under rather demanding conditions) is probably attributable to the greater degree of experience obtained by E during pilot work. Responses for this FTI group were also broken down by categories. Categories 1, 2, and 4 all appeared with high frequency, but categories 3 and 5 comprised only 8% of the reinforced statements. It would seem desirable for future research to determine the importance of these categories and, if feasible, devise methods for increasing their occurrence.

Responses to the questionnaire concerning the Ss' attitude toward the experiment were all skewed in the positive direction with rather small differences between conditions. These differences were rather consistent, however, with Ss giving the most positive ratings to the TI condition, followed by the I, FI, and FTI conditions, respectively. The γ statistic (Hayes, 1963, pp. 655-656) was computed to compare the effects of the presence of either feedback or therapists for each questionnaire item. Ss were more likely ($\gamma > .30$) to report enjoying and feeling comfortable when neither the therapist or feedback were present. Conversely, Ss thought they were more concerned with each other and learned more about themselves when the therapist was present. Five

other items indicated more positive ratings for non-feedback conditions: worthwhileness of experience; open discussion of feelings, both self and others; feeling closer to others; and experience helping in other situations.

It is interesting that, if anything, there seems to be a negative correlation between the effectiveness of a condition in meeting the experimental goals and the degree of liking for that condition. Instead, the degree of liking for a condition seemed to be related inversely to the amount of subjective pressure experienced by a group. Thus Ss in the FTI and FI conditions uniformly mentioned feeling pressured by the reinforcement apparatus to compete and to live up to E's expectations. Similarly, Ss in the I condition indicated that they enjoyed interacting with the rest of their group, but were aware they were not fulfilling the experimental demands. It is probable that the TI condition most closely matched the Ss' prior expectations concerning the experiment and this may have contributed to the highly positive ratings for this condition.

Conclusions

The results of the present study demonstrated that complex, 'here-and-now' affective verbalizations, basic to most experiential or therapeutic groups, could be reliably elicited in a group by simple reinforcement techniques, but not by mere instructions. Further, reinforcement appeared to produce levels of performance equivalent to that elicited by therapists with over one year of extensive group experience. It would seem, however, that the processes underlying the reinforcement and therapist effects are different, since their combination resulted in a doubling of the performance level. It may be, perhaps, that therapists produce their effects through enhancing motivational modeling, or shaping processes, but generally not through reinforcements of desired behavior.

A post hoc analysis of therapist behavior suggested several hypotheses to explain differences in therapist effects. While the present study was not designed to examine these notions critically, there was evidence that therapist effectiveness was enhanced by greater task orientation, more frequent modeling of desired behaviors, and by fewer overall interventions by the therapist. The latter indication is similar to Salzberg's (1961) finding of an inverse relationship between therapist verbalization and group interaction.

Analysis of Ss attitudes toward their group experience revealed that, despite the effectiveness of the feedback procedures, they were generally viewed slightly less positively than unled or therapist only conditions. It was thought that this was due in part to the novelty of the feedback apparatus and in part to a greater degree of pressure to perform under feedback conditions. It would be desirable for future research to investigate methods for enhancing the attractiveness of the

reinforcement procedures, since this effect could possibly lead to attendance problems over a series of sessions.

In sum, the reinforcement procedures used in this study appear to have a number of potentially valuable applications. First, the present paradigm provides a useful method for eliminating potentially contaminating therapist effects in research into the group process. Second, the verbal categories would appear to provide meaningful, reliable, and sensitive dependent measures for evaluating the effects of manipulating group processes. Third, these procedures would appear to be an invaluable adjunct to the therapist in promoting the rapid development of meaningful discussions in experiential or therapeutic groups. Fourth, by eliminating the therapist, many of Wolf's (1961), objections to led groups can be eliminated and independence can be encouraged, while still retaining indirect control of the group process. Fifth, these procedures seem admirably suited to investigating and possibly enhancing the generalization to other situations of behaviors acquired in the group. This problem has been long neglected in the group literature. Thus, e.g., Ss trained in a reinforcement group could be 'seeded' in other groups and their performance monitored for generalization. Generalization might be enhanced by introducing intermittent schedules of reinforcement and by sequencing S through a series of 'seed' groups. Finally, procedures such as these seem to be essential if the practice of group therapy or learning groups is ever to move from an art with competing schools to a science with proven techniques. Research in group processes has lagged behind due to an over-reliance on global measures and techniques and through ignoring the problem of adequate experimental controls. It is now necessary to formulate limited questions addressed to specific techniques or processes and to devise specific tests for these questions even if some degree of 'reality' must be sacrificed.

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Table 1

Analysis of Variance for Number of Reinforceable Responses.

Source	df	ms	F
Feedback (F)	1	1131.0	15.16*
Therapist (T)	1	1938.0	25.98*
F x T	1	7.5	<1
error	44	74.6	

* p <.001